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IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant: **Joseph A. Bobier**)
Serial No: **09/916,054**) Group Art Unit: **2682**
Filed: **July 26, 2001**) Examiner: **Milord, Marceau**
For: **Suppressed Cycle Based Carrier**)
Modulation Using Amplitude Modulation)
Attorney Docket: **P012676-01UT**)

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Dear Sir:

RESPONSE

In response to the Office Action mailed October 9, 2003, Applicant appreciates the Examiner's allowance of Claims 9-17 but respectfully requests reconsideration of the disallowed Claims 1-8 in the above-referenced application in light of this response and amendment as stated in the following paragraphs.

Claim 1 was objected to by the Examiner because of a formality that has been corrected in the amendment below.

The Examiner has rejected Claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Kolanek (U.S. Pat. No. 6,147,553) in view of Filipovic et al (U.S. Pat. No. 5,910,752) and Midya (U.S. Patent No. 5,838,210). The Examiner has stated in his rejection that Kolanek discloses a modulated radio frequency carrier in Figures 1 and 6, capable of transmitting a binary information stream made up of first and second binary

states comprising: a carrier frequency waveform made up of wavelets; and, said wavelets having been modulated in accordance with said information stream by having suppressed the amplitude of said wavelets corresponding to said first binary states of said information stream and not having suppressed the amplitude of said wavelets corresponding to said second binary states of said information stream. Kolanek does not specifically disclose a continuous sequence of Wavelets being defined by a 360 degree cycle between crossover positions; said crossover positions representing a substantially zero energy level. The Examiner then cites Filipovic et al that teaches a receiver that receives, amplifies, filters, and down converts an RF signal to obtain an FM signal. The FM samples from the ADC are provided to an edge detector, which detects transitions in the FM samples. The transitions correspond to zero crossing in the FM signal. The time period between zero crossings, or the cycle width, is measured with a counter to determine the instantaneous frequency of the FM signal. The Examiner further states that Midya also discloses a method for generating a modulated signal including a pulse modulation source, a pulse modulator for modulating a pulse signal, and a harmonic reduction filter for passing the switching frequency of the pulsed signal as the RF carrier. The Examiner then states that it would be obvious to one skilled in the art, at the time the invention was made, to apply the technique of Midya to the modified system of Filipovic and Kolanek in order to suppress the amplitude of a cycle that results in suppressed cycle modulation. The Examiner also rejected the method claims 3 through 8 under these same patents.

Applicant certainly appreciates the Examiner's allowance of Claims 9 through 17, but Applicant respectfully disagrees with the Examiner's finding that Kolanek in view of Filipovic et al and Midya substantially makes obvious Applicant's invention to someone skilled in the art.

Applicant's review of Kolanek reveals it is in fact only a system for efficient generation and amplification of wideband modulated signals (see column 1, lines 5-10 and lines 65-67). Nowhere in Kolanek is it disclosed, or even suggested that Kolanek's system would or could be used to construct this very narrowband RF signal capable of

transmitting digital information at the carrier frequency rate as claimed in Claims 1 through 8.

And, although Filipovic discloses a method of zero crossing detection for frequency counting as is well known in the art, no where in Filipovic is it disclosed, or even suggested to combine such zero detection with the suppression of a RF carrier signal exactly between the zero crossing points (i.e. suppression of individual "wavelets" defined as the 360 degree cycle of a carrier signal between two zero crossing points) for generation of a suppressed cycle modulated RF signal to create this very narrowband RF signal, as discussed in the application and claimed in Claims 1 through 8.

Midya, like Kolanek, is used for generation and amplification of wideband signals (see column 1, lines 5-10 and 59-63). And although it modulates pulses and filters them, that modulation creates wideband signals, not the signal of this application.

Applicant appreciates Examiner's detailed and thorough review of this application as evidenced by the referenced prior art, but Applicant believes the Examiner has missed a very important feature of this invention. That is, the suppression of the amplitude is applied only on the discrete wavelet or number of discrete wavelets. This is totally different from any other type of modulation. By applying the suppression on only discrete wavelets, very little sideband energy is generated, thus creating very narrow bandwidths capable of transmitting very fast data rates.

All the prior art sited, and all other prior art to the Applicant's knowledge, apply modulation onto the carrier wavelets without regard to the discrete wavelets or pulses. Thus as the modulation frequency increases and the carrier frequency increases in attempts to increase the information transmission rate, the sidebands created by harmonics increase, and require broader and broader bandwidths to transmit the information. The prior art cited attempts to work within this accepted framework of faster transmission means broader bandwidths.

Applicant's disclosure completely changes this accepted framework by applying the suppression (modulation) only on the complete 360 degree cycle wavelet. By doing so, very few low energy sidebands are created, yet the suppression or non-suppression of the discrete wavelet can be detected, thus transmitting digital information at a rate up to the carrier frequency.

Applicant's review of Claims 1 through 8 as written, has revealed how the Examiner may have interpreted these important claims as describing the very different prior art. Thus Applicant has amended independent Claims 1 and 3 below by adding language specifying that it is an "integer number of said wavelets" that are suppressed, making it clearer that only complete discrete wavelets are suppressed, since integer numbers only represent whole numbers. None of the prior art cited by the Examiner alone or in combination, disclose or even suggest the suppression of an integer number of discrete wavelets, and thus Applicant strongly believes this should remove any question of obviousness from the objected-to claims.

It is well established case law that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching suggestion or incentive supporting the combination. See *In re Greiger*, 815 F 2.2d 686, 2 USPQ 2d 1276, 1278 (Fed Cir. 1987). The Courts have also stated "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This Court has previously stated that '[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Frich*, 972 F. 2d 1260, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992) (quoting *In re Fine*, 837 F. 2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)).

The Examiner has found in Filipovic et al and Midya, some, but not all, of the missing elements, not shown in Kolanek, of Applicant's invention and pieced them

together, thus stating Applicant's invention was obvious. The problem with this is the Kolanek, Filipovic et al, and Midya patents are far removed from the type of invention claimed by the Applicant, with no suggestion in either of these patents of combining the unique discrete wavelet suppression technique into a signal and method generating such signal as claimed in Claims 1 through 8.

Given the total differences in the RF signal and method of generation disclosed by the references as compared with Applicant's invention, Applicant strongly believes the Examiner has not presented a *prima facie* case of obviousness. This is because the references cited by the Examiner, alone or taken together, do not teach a suggestion to combine or modify the references, such that the combination or modification, not to mention the discrete wavelet limitation required by the claims to result in Applicant's invention, would be sufficient to have made the claimed subject matter of the Applicant's invention obvious to one of ordinary skill in the art. It is not enough that the Examiner present references that contain the assorted features of the invention (which Applicant believes the Examiner has not accomplished in this case). The Examiner must also show why it would appear that the reference would have been combined. The Kolanek, Filipovic et al, and Midya disclosures in no way suggest an invention of a very narrowband signal and method of data transmission as claimed in Applicant's application.

The present invention, i.e., an invention with the ability to greatly increase the transmission of data and greatly decrease the bandwidth required, as defined in Claims 1 and 8, is not obvious and not taught by the references cited. The Examiner has used the claimed invention as a reference against itself as if it had preceded itself in time. Legal authority invalidates such an analytical or reverse engineering approach to patent examinations. It is not Applicant's burden to refute the Examiner's position that it would have been obvious to one of ordinary skill in this art at the time this invention was made, to arrive at the present invention in view of the Kolanek, Filipovic et al, and Midya patents. It is the burden of the Examiner to show some teaching or suggestion in the references to support this allegation. Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 USPQ2d

1434 (Fed. Cir. 1988).

With respect to evaluation of claims under 35 U.S.C. 103, “every portion of the ... claim must be considered in determining ... obviousness” [emphasis added]. In re Duva, 165 USPQ 90, 94 (CCPA 1967). In order to combine references, there must be a “suggestion of the desirability” of the combination. In re Noznik, Tatter and Obenauf, 178 USPQ 43 (CCPA 1973). An explanation as to the reason for combining the cited references was not proffered, only that obviousness was evident based on a speculative combination of the references. No combined teaching in the references would give one of ordinary skill in the art the invention defined by the claims.

A finding by the Examiner that a claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made based merely upon finding similar elements in a prior art reference would be “contrary to statute and would defeat the congressional purpose in enacting Title 35.” Panduit Corp. v. Dennison Mfg. Co., 1 USPQ2d 1593, 1605 (Fed. Cir. 1987). Thus, the Examiner cannot pick and choose among the individual elements of assorted prior art references to attempt to recreate the claimed invention. See, e.g., Azko N.V. v. United States International Trade Commission, 1 USPQ2d 1241, 1246 (Fed. Cir. 1986), cited with approval in SmithKline Diagnostics, Inc. v. Helena Laboratories Corp., 8 USPQ2d 1468 (Fed. Cir. 1988). As stated in In re Sernaker, 217 USPQ 1, 6 (Fed. Cir. 1983):

... prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings.

The difficult task of the Examiner is to not “fall victim to the insidious effects of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” W.L. Gore & Associates v. Garlock, Inc., 22 USPQ 303, 312-313 (Fed Cir. 1983).

As the Federal Circuit observed in Orthopedic Equipment Co. v. United States, 217 USPQ 193, 199 (Fed Cir. 1983):

The question of nonobviousness is a simple one to ask, but difficult to answer ... The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness ...

The claims in this important patent application were in fact drawn to a new, useful and nonobvious invention. Accordingly, Applicant respectfully submits that the invention claimed is clearly patentable over such prior art or any combination thereof.